

**REMARKS**

Claim 17 has been rewritten in independent form to include all of the limitations of independent claim 14 from which claim 17 depends. Since claim 17 was not rejected, Applicants respectfully request that the Examiner indicate that claim 17 is allowed.

The Examiner objected to the abstract.

The Examiner rejected claim 4 under 35 U.S.C. §112, second paragraph.

The Examiner rejected claims 1-2 under 35 U.S.C. §102(b) as allegedly being clearly anticipated by Weeks et al. (5,227,606).

The Examiner rejected claims 1-3 under 35 U.S.C. §102(b) as allegedly being clearly anticipated by Hatch et al. (4,929,370).

The Examiner rejected claim 3 under 35 U.S.C. §103(a) as allegedly being unpatentable over Weeks et al. ('606).

The Examiner rejected claims 4-5, 10, and 14-16 under 35 U.S.C. §103(a) as allegedly being unpatentable over Hatch et al. ('370) in view of Weinreich (5,435,671).

The Examiner rejected claims 6-9 and 12-13 under 35 U.S.C. §103(a) as allegedly being unpatentable over Hatch et al. ('370) in view of Weinreich ('671), and further in view of Frater (6,355,360).

The Examiner rejected claim 11 under 35 U.S.C. §103(a) as allegedly being unpatentable over Hatch et al. ('370) in view of Weinreich ('671), and further in view of Block (4,269,549).

Applicants respectfully traverse the objection to the abstract, and the §112, §102 and §103 rejections with the following arguments.

**Objection To The Abstract**

The Examiner objected to the abstract, allegedly "because it is directed at the method of drilling a stack of metal articles. The presently claimed invention is directed at the article itself, not the method, and the Examiner therefore suggests amending the abstract to be in accordance with the claimed invention. "

In response, Applicants have amended the abstract to be in accordance with the claimed invention.

**35 U.S.C. §112, Second Paragraph**

The Examiner rejected claim 4 under 35 U.S.C. §112, second paragraph, allegedly "for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as his invention. Claim 4 refers to "the removable adhesive," thereby referring back to the removable adhesive claimed in claim 1. The Examiner has interpreted claim 4 to mean, however, that a removable adhesive is being placed on both the top and bottom surfaces of the stack. Claim 1 only claims removable adhesive "between each sheet" and fails to claim adhesive on the top and bottom surfaces of the stack of sheets. Therefore, The Examiner suggests either claiming in claim 1 that the adhesive also is present on the top and bottom surfaces of the stack of sheets, or claiming separate adhesive layers in claim 4 rather than using the antecedent basis term "the" in referring back to claim 1. Proper clarification and/or correction are required."

In response, the portion of the rejection referring to claim 1 is moot, since claim 1 has been canceled. As to claim 4, Applicants have amended claim 4 in accordance with the Examiner's suggestion.

**35 U.S.C. §102(b)**

The Examiner rejected claims 1-2 under 35 U.S.C. §102(b) as allegedly being clearly anticipated by Weeks et al. (5,227,606).

In light of the cancellation of claim 1 and the amending of claim 2 to depend from claim 4, Applicants contend the preceding rejection of claims 1-2 under 35 U.S.C. §102(b) as allegedly being clearly anticipated by Weeks is moot.

The Examiner rejected claims 1-3 under 35 U.S.C. §102(b) as allegedly being clearly anticipated by Hatch et al. (4,929,370).

In light of the cancellation of claim 1 and the amending of claims 2-3 to each depend from claim 4, Applicants contend the preceding rejection of claims 1-3 under 35 U.S.C. §102(b) as allegedly being clearly anticipated by Hatch is moot.

35 U.S.C. §103(a)

The Examiner rejected claims 4-5, 10, and 14-16 under 35 U.S.C. §103(a) as allegedly being unpatentable over Hatch et al. ('370) in view of Weinreich (5,435,671).

The rejection of claims 14-16 is moot, since claims 14-16 have been canceled.

Applicants respectfully contend that claim 4 is not unpatentable over Hatch in view of Weinreich, because Hatch in view of Weinreich does not teach or suggest each and every feature of claim 4.

A first example of why claim 4 is not unpatentable over Hatch in view of Weinreich is that Hatch in view of Weinreich does not teach or suggest "a removable adhesive" as required by claim 4.

The Examiner argues: "Hatch et al. disclose a structure comprising a stack comprising a plurality of sheets such that each successive sheet is coupled with a removable adhesive between each sheet, and an opening extends through the plurality of sheets within the stack. The sheets may be selected from copper (Col. 4, lines 31-46). The removable adhesive is in the form of a lubricant which is a water soluble polymer and/or water solution (Col. 5, lines 30-45). The adhesive layer helps produce smooth-walled drill holes, i.e., burr free holes (Col. 5, lines 37-40).

In response to the preceding argument by the Examiner, Applicants respectfully contend that Hatch does not teach or suggest that the lubricant is adhesive. In addition, Applicants respectfully disagree with the Examiner's assertion that Hatch discloses in col. 5, lines 30-45 that the lubricant may be a water solution.

A second example of why claim 4 is not unpatentable over Hatch in view of Weinreich is

that Hatch in view of Weinreich does not teach or suggest "wherein the second layer prevents burr formation".

The Examiner argues: "Hatch et al. further teach the use of entry and exit materials positioned on opposing sides of the stack of sheets (Fig. 3, #s 34 and 36). The entry and exit material for the sheets is typically some type of paper base or thin metal sheet such as aluminum (Col. 6, lines 54-56). Although Hatch et al. teach the use of an entry and exit material layer, Hatch et al. fail to teach the use of a burr preventing layer/ foil layer combination as claimed by the Applicant. Weinreich, however, teach the use of a multilayered entry/exit board comprising a paper board laminate impregnated with a lubricant and aluminum foil layer combination (see Fig. 1). The multilayered entry/exit board is taught by Weinreich for the purpose of resisting burr--formation during drilling (Col. 2, lines 21-46). It would have been obvious to one of ordinary skill in the art at the time Applicant's invention was made to have combined the teachings of Hatch et al. and Weinreich since each of the aforementioned references are analogous insofar as being directed at entry/exit substrates for improving the drilling of stacked metal substrates. Therefore, it would have been obvious to one of ordinary skill in the art at the time Applicant's invention was made to have modified Hatch et al. to include a multilayered entry/exit board as taught by Weinreich in order to resist burr-formation during drilling."

Applicants respectfully contend that the preceding argument by the Examiner is not persuasive, because the entry board disclosed by Weinreich as resisting burr formation is not a foil. A foil is "a very thin sheet or leaf of metal" (see Webster's New World Dictionary 523 3d ed. 1988). The entry board disclosed by Weinreich as resisting burr formation comprises a non-metallic sheet and is therefore not a foil, as recited in Weinreich, col. 2, lines 21-27 ("According

to another aspect of the invention, therefore, an entry board for use adjacent a printed circuit board (PCB) during drilling therethrough comprises a PCB-engaging sheet adapted to resist burr-formation during drilling, characterised in that it is laminated with a **non-metallic sheet** over whose surface is distributed a drill lubricant " (emphasis added)). See also Weinreich, claim 1.

Applicants respectfully contend that the preceding argument by the Examiner is not persuasive, because Hatch's invention effectively resists burr formation (see Hatch, col. 10, lines 8-16; col. 10, lines 41-47; col. 10, lines 48-55). Therefore adding Weinreich's entry board to Hatch's invention would add unnecessary complexity and expense.

Based on the preceding arguments, Applicants respectfully maintain that claim 4 is not unpatentable over Hatch in view of Weinreich, and that claim 4 is in condition for allowance. Since claims 5 and 10 depend from claim 4, Applicants contend that claims 5 and 10 are likewise in condition for allowance.

The Examiner rejected claims 6-9 and 12-13 under 35 U.S.C. §103(a) as allegedly being unpatentable over Hatch et al. ('370) in view of Weinreich ('671), and further in view of Frater (6,355,360). Since claims 6-9 and 12-13 depend from claim 4, which Applicants have argued *supra* to be patentable under 35 U.S.C. §103(a) over Hatch in view of Weinreich, Applicants maintain that claims 6-9 and 12-13 are not unpatentable under 35 U.S.C. §103(a) over Hatch in view of Weinreich and further in view of Frater.

The Examiner rejected claim 11 under 35 U.S.C. §103(a) as allegedly being unpatentable over Hatch et al. ('370) in view of Weinreich ('671), and further in view of Block (4,269,549).

Since claim 11 depends from claim 4, which Applicants have argued *supra* to be patentable under 35 U.S.C. §103(a) over Hatch in view of Weinreich, Applicants maintain that claim 11 is not unpatentable under 35 U.S.C. §103(a) over Hatch in view of Weinreich and further in view of Block.

Additionally in relation to claim 11, Applicants respectfully disagree with the following assertion by the Examiner: "It is notoriously well known in the art, however, that although aluminum is generally a preferred foil material, functionally equivalent foil materials including copper, magnesium, and steel may also be used as the foil sheets in entry/exit board formations as evidenced by Block (Col. 2, lines 5-11)". Applicants maintain that Block does not disclose copper as being equivalent to aluminum for the same functional purpose of the aluminum foil in Weinreich. Applicants respectfully request that the Examiner provide credible evidentiary support of the preceding assertion by the Examiner.



**CONCLUSION**

Based on the preceding arguments, Applicants respectfully believe that all pending claims and the entire application meet the acceptance criteria for allowance and therefore request favorable action. If the Examiner believes that anything further would be helpful to place the application in better condition for allowance, Applicants invites the Examiner to contact Applicants' representative at the telephone number listed below.

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